Mr. Michael T. Davis Name: \_\_\_\_\_ Algebra II Delta & Eta Date: January 6, 2015

Do in Class Today.

Complete the table:

|  |  |  |  |
| --- | --- | --- | --- |
| An expression written as a product of bases with exponents | The expression expanded as a multiple product of the base | The expression simplified as one base with one exponent | The expression simplified to one number with a power of only 1 |
| 112 x 113 | 11 x 11 x 11 x 11 x 11 | 115 | 161051 |
|  |  |  |  |
| 52 x 52 |  |  |  |
|  |  |  |  |
| 53 x 56 |  |  |  |
|  |  |  |  |
| 24 x 23 |  |  |  |
|  |  |  |  |
| 73 x 72 x 76 |  |  |  |
|  |  |  |  |
| 73 x 72 |  |  |  |
|  |  |  |  |
| 44 x 41 x 42 |  |  |  |
|  |  |  |  |
| 68 x 68 |  |  |  |

**To multiply exponential expressions with the same base:**

Rewrite each expression as the one base with one exponent. You do not need to simplify that expression to one number with a power of 1 as in the table above.

26 × 24 513 × 55 × 52

106 × 105 ×101 66 × 62 × 65

*c*2 × *c*7 *r* × *r*4

Simplify each algebraic expression.

2*n*5 × 3*n*2 5*x* × 2*y*4 × 3*x*8

*n*2 × *n*3 × 7*n*  2*y*3 × 7*x*2 × 2*y*4

*m*2 × *n*2 × 7*m* *p*2 × *p* × *p*5

2*q* × 3*p*3 × 4*q*4 5*t*2 × 2*g* × 7*t*-4

5*t*² × 2*t*5 (7*x*5)(8*x*)

3*x*² × *x*² (2*n*4)(2*n*)

*b*² × *b*4 × *b* (-2*m*³)(3.5*m*³)

(15*a*³)(-3*a*) (*x*5*y*2(*x*6*y*)

*a*6*b*3 × *a*2*b*2 *m*² × 4*r*³ × 12*r*4 × 5*m*

**Raising an exponential expression to another power (raising a power to a power):**

Example: (*x*3)6 is an expression raising x to the power 3, which then is being raised to the power 6.

Simplify each expression:

(*x*2)8 (*a*4)7 *c*5(*c*3)2

(*a*4)7 (*a*5)2 *t*2(*t*7)2

(*a*4)2 × (*a*2)5 *b*2(*b*3)2 (*a*4)4

(2*d*4)2 (2*z*)4 (4*g*5)-2

(*x*-2)2(3*xy*2)4 (*c*2)3(3*c*5)4 (2*a*3)5(3*a*b2)3

(6*mn*)3(5*m*3)2 (*d*³)5(*d*³)10 (*t*²)²(*t*²)5

**To raise a power to a another power you should \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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